

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

**Applicants:** Timothy C. Krywanczyk, et al.    **Examiner:** Steven H. Rao  
**Serial No.:** 10/715,689                                    **Art Unit:** 2814  
**Filed:** November 18, 2003                                **Docket:** END920030002US1 (18560)  
**For:** ULTRAVIOLET ENERGY CURABLE TAPE AND METHOD OF MAKING A SEMICONDUCTOR CHIP USING TAPE                                    **Dated:** November 5, 2008

**Confirmation No.:** 4803

Hon. Commissioner for Patents  
United States Patent and Trademark Office  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF**

Sir:

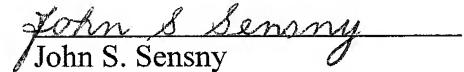
Pursuant to 35 U.S.C. 134 and 37 C.F.R. 41.41, entry of this Reply Brief in response to the Examiner's Answer in the above-identified matter is respectfully requested.

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Dated: November 5, 2008

  
John S. Sensny

## I. INTRODUCTION

Appellants have appealed the rejection of Claims 1-9, 11, 12, 14, 16-19 and 30-35 under 35 U.S.C. 102 as being anticipated by PCT patent application no. 92/15651 (Moon).

After carefully considering the Examiner's Answer, Appellants respectfully submit that the Examiner has not effectively rebutted either of Appellants two contentions:

- 1) That, when determining the patentability of the claims, the Examiner must take into consideration the claim limitation that the tape includes material which starts to emit light of a first type when the tape becomes substantially cured; and
- 2) Moon does not disclose this claim limitation.

In the interest of brevity, Appellants will specifically discuss herein these issues as they relate to Claim 1. Analogous arguments apply to Claims 11 and 34, which are the other independent claims.

## II. DISCUSSION

### A. The claim limitation must be considered

In the Examiner's Answer, the Examiner argues that the claim limitation “‘becomes substantially fully cured’ starts to emit light’ is a hybrid product by process and particular use/functional recitation limitation for which no patentable weight can be given unless recited in proper format” (Examiner's Answer, Page 4, lines 11-14).

It may be significant that the Examiner does not accurately quote the claim limitation. This limitation, in Claim 1, is that the adhesive material includes “a material which starts to emit optical light of a first type when said tape becomes substantially fully cured” (Claim 1, lines 4 and 5). Thus, the light emitting material does not begin to emit light when that

material becomes substantially cured (as the above quote from the Examiner’s Answer may imply). Instead, the light emitting material starts to emit light when the tape becomes substantially fully cured.

This limitation must be taken into consideration when determining the patentability of Claim 1 because the limitation is a positive limitation that describes a specific function of a specific element of the claim. This is not a hybrid product by process limitation. Appellants are not claiming a method of curing the tape or a method of making the tape. Instead, Appellants are claiming a curable tape that has specific elements that function in specified ways – and in particular, this tape includes a material that starts to emit optical light of a first type when the tape becomes substantially fully cured.

The use of functional language in a claim is permissible and, in some situations is a practical necessity. In re Swinehart and Spiligoj, 169 USPQ 226 at 228 (CCPA 1971). In Swinehart, functional language in a claim was considered by the CCPA and found to distinguish the claim over the prior art. The Court explained that “functional” indicates “nothing more than the fact that an attempt is being made to define something...by what it *does* rather than by what it *is*.” Swinehart, at 228 (emphasis in the original). In the Court’s view, “there is nothing intrinsically wrong with the use of such a technique in drafting patent claims.” Swinehart, at 228.

The Examiner cited Swinehart in the Examiner’s Answer for the proposition that “It is elementary that the mere recitation of a newly discovered function or property inherently possessed by things in the prior art, does not cause a claim drawn to distinguish over prior art...’ In re Swinehart, 169 USPQ 226” (Examiner’s Answer, Page 14, lines 6-9). This, however, does not support the Examiner’s position that the claim limitation should not be

considered. In fact, Swinehart, as discussed above, holds that the claim limitation must be considered.

In In re Bylund, 217 USPQ 492 (PTO Bd. App. 1981), the Board stated that “...functional language in the claims must be given full weight and may not be disregarded in evaluating the patentability of the subject matter defined employing such functional language.” In re Bylund, at 498. Similarly, in In re Hallman, 210 USPQ 609 (CCPA 1981), the CCPA also held that “It is well settled that there is nothing intrinsically wrong in defining something by what it does rather than what it is.” In re Hallman, at 611. It is noted that in both Bylund and Hallman the claims at issue were found not patentable, however, what is important for purposes of the present appeal is that both the CCPA and the PTO Board held that the functional language must be considered.

In the present case, Appellants have done exactly what the CCPA and the Board have said patent applicants can do – include in the claim a description of what the invention does. Specifically, Appellants have included in Claim 1 the limitation that the adhesive material of the tape includes a material that starts to emit optical light of a first type when the tape becomes substantially fully cured. This limitation thus must be taken into consideration when the patentability of the claims is determined.

The Examiner’s reliance on 35 U.S.C. 112 as supporting the Examiner’s position is misplaced. The sixth paragraph of 35 U.S.C. 112 expressly uses the word “may” and indicates that an element in a claim for a combination “may” be expressed as a means or step for performing a specified function .” There clearly is no requirement in 35 U.S.C. 112, or elsewhere, that in order for functional language to be considered when determining the

patentability of a claim, that functional language must be expressed in the form of a means plus function language.

B. Moon does not disclose the claim limitation

Appellants' second contention is that Moon does not disclose the claim limitation that the adhesive includes a material that which starts to emit optical light of a first type when the tape becomes substantially fully cured.

In the Examiner's Answer, the Examiner argued that Moon discloses "a material which starts to emit optical light when said tape is substantially fully cured (Moon page 7, lines 18-21, e.g. UV dyes, pigments similar to UV dyes mentioned in Applicants' specification pages 9, line 17 to page 10, line 18)" (Examiner's Answer, Page 4, lines 7-10). Page 7, lines 18-21 of Moon disclose that various materials can be blended with the polymerizable monomer mixture. These other materials include fillers, tackifiers, foaming agents, antioxidants, plasticizers, reinforcing agents, dyes, pigments, fibers, fire retardants, and viscosity adjusting agents. There is no disclosure, though, that any of these fillers starts to emit optical light of a first type when the tape becomes substantially fully cured.

The Examiner, in the Examiner's Answer (page 7, lines 14-19), states that a defined amount of UV energy is required to fully cure a particular tape, and that Moon from page 7, line 27 to page 8, line 2, discloses that "said same defined amount of UV energy causes the given material to begin to emit light of a [given] type, whereby said given material provides substantially fully cured a visible indication that the tape is substantially fully cured."

Here too, it may be significant that the claim limitation is not that the material begins to emit light when that material becomes substantially fully cured. Instead, the claim limitation is that this material starts to emit light when the tape becomes substantially fully cured.

Moreover, this portion of Moon (page 7, line 27 to page 8, line 2), does not describe any material starting to emit light when the tape becomes substantially fully cured. Rather, this portion of Moon describes the use of the refractive index of the adhesive layer as a measure of the extent of polymerization.

The Examiner, at several places in the Examiner's Answer, comments that Moon discloses UV dyes, pigments similar to UV dyes mentioned in Applicants' specification (For example, Examiner's Answer, page 7, lines 13 and 14). The Examiner also argues (Examiner's Answer, page 11, line 20 to page 12, lines 1) that "what is true for applicants" that UV dyes/pigments are material that starts to emit light of a first type when the tape become substantially fully cured, is also true for the applied Moon reference. The Examiner then goes on to contend that "the inherent property of the dye to emit light when fully cured (by the use of same material for the same purpose) is true for Moon as is true for Applicants" (Examiner's Answer, page 12, lines 3-5).

It appears that the Examiner may believe that any dye, when used in the adhesive material described in Claim 1, would start to emit light when the tape becomes substantially fully cured. This is not the case, though. This property is not inherent in dyes.

In order to start to emit light in the manner described in Claim 1, the light emitting range of the dye needs to be designed to match the amount of energy required to substantially fully cure the tape (See, application, page 9, line 22 to page 10, line 3). This design and the

matching of the light emitting material with the degree of curing of the tape is missing in Moon.

In addition, it is significant that Moon discloses a procedure for determining the degree of polymerization of the adhesive material. Specifically, as mentioned above, Moon, from page 7, line 27 to page 8, line 2, explains that the extent of polymerization is monitored by measuring the refractive index of the adhesive material. The use of this refractive index to measure the extent of polymerization would not be necessary if the die, or other filler, used with the adhesive material of Moon started to emit light when the adhesive material becomes substantially fully cured,. The fact that Moon uses this index of refraction to monitor the polymerization of the adhesive is thus evidence that the dye, and any other filler material used in Moon, does not start to emit light in the manner asserted by the Examiner.

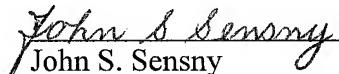
It is important to keep in mind that a strict identity test must be met in order for a reference to anticipate a claim under 35 U.S.C. 102. As the Court of Appeals for the Federal Circuit explained in Apple Computer, Inc. v. Articulate Systems, Inc., 57 USPQ2d 1057, 1061 (Fed. Cir 2000), “Anticipation under 35 U.S.C. 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention.” “Substantial identity” or “equivalency” is not sufficient. RCE Corp. v. Applied Digital Data Sys., Inc., 221 USPQ 385 (Fed. Cir. 1984).

### III. CONCLUSION

For the reasons discussed above, and for the reasons advanced in Appellants' Brief in support of this Appeal, it cannot be said that Moon anticipates any of the independent claims 1, 11 or 31. Claims 2-9 and 30-33 are dependent from Claim 1 and distinguish therewith over Moon. Likewise, Claims 12, 14 and 16-19 are dependent from, and distinguish over Moon with, Claim 11; and Claim 35 is dependent from Claim 34 and distinguishes therewith over Moon. Thus, the rejection of the Claims 1-9, 11, 12, 14, 16-19 and 30-35 under 35 U.S.C. 102 is not proper, and the Board is requested to reverse this rejection.

Respectfully submitted,

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